AMENDMENT

IN THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) A circuit ~~of a scanner to perform color space conversion for a RGB signal~~, comprising:

a plurality of ~~sampling amplified offset devices,~~ gain amplifiers, adapted to ~~sample, amplify and compensate levels of an R charge signal, a G charge signal and a B charge signal, respectively, to obtain an R analog signal, a G analog signal and a B signal~~ impart a gain to an associated plurality of color signals according to a first color model;

an adder, to ~~perform an addition calculation on the R analog signal, the G analog signal and the B analog signal to obtain an addition analog signal~~ combine said amplified color signals to provide one or more output signals; and

~~a multiplexer, to select the R analog signal, the G analog signal, the B analog signal or the addition analog signal as output~~ a circuit to set gains associated with said gain amplifiers to provide said one or more output signals as one or more color signals of a second color model.

2. (Currently Amended)The circuit according to claim 1, wherein ~~each of the sampling amplified offset devices further comprises:~~

~~a correlation double sampler, to perform sampling two times on the R, G or B charge signal, and to perform a subtraction operation on results of the two samplings to obtain a luminance;~~

~~a programmable gain amplifier, to adjust a gain value to amplify the luminance, and to obtain an amplified luminance according to the gain value; and~~

~~an offset device, to compensate level of the amplified luminance to obtain the R, G or B analog signal of the R, G or B charge signals, respectively~~ said first color model comprises an RGB color model.

3. (Currently Amended)The circuit according to claim 1, wherein ~~each of the sampling-amplified-offset devices further comprises:~~

~~a correlation double sampler, to perform sampling two times on the R, G or B charge signal, and to perform a subtraction operation on results of the two samplings to obtain a luminance;~~

~~an offset device, to compensate a level of the luminance to obtain a compensated luminance; and~~

~~a programmable gain amplifier, to adjust a gain value to amplify the compensated luminance, and to obtain the R, G or B analog signal of the R, G or B charge signals~~ wherein said second color model comprises a YUV color model.

4. (Cancelled)

5. (Currently Amended) A circuit ~~of a scanner to perform a color space conversion on an RGB signal~~, comprising:

a plurality of sampling-amplified-offset devices, to sample, amplify ~~and~~ and/or compensate levels of ~~an~~ a R charge signal, a G charge signal and a B charge signal, respectively, to obtain ~~an~~ a R analog signal, a G analog signal and a B analog signal;

a gain adder, adapted to multiply ~~each~~ one or more of the R, G and B analog signals by a corresponding weighted value, and to add one or more of the R, G and B analog signals multiplied by the weighted values to obtain ~~an addition~~ a summed analog signal; and

a multiplexer, to select one or more of the R analog signal, the G analog signal, the B analog signal or the ~~addition~~ summed analog signal as an output signal.

6. (Currently Amended)The circuit according to claim 5, wherein one or more ~~each~~ of the sampling-amplified-offset devices further comprises:

a correlation double sampler, to ~~perform sampling twice~~ obtain a plurality of samples on ~~the~~ one or more of the R, G or B charge signal and to ~~perform a subtraction operation on results of the two~~

~~samplings to obtain~~ determine a luminance based at least in part on a difference between at least two of said samples;

a programmable gain amplifier~~, to adjust a gain value to amplify the luminance and~~ to obtain an amplified luminance according to ~~the~~ a gain value; and

an offset device, to compensate ~~a level of the amplified luminance to o~~btain the R, G or B analog signal of the one or more of the R, G and B charge signals, respectively, based at least in part on the obtained amplified luminance.

7. (Currently Amended)The circuit according to claim 5, wherein one or more ~~each~~ of the sampling-amplified-offset devices further comprises:

a correlation double sampler, to ~~perform sampling twice~~ obtain a plurality of samples of one or more of ~~on~~ the R, G or B charge signals and to ~~perform a subtraction operation on results of the two sampling samplings to obtain~~ obtain a luminance;

an offset device, to compensate a level of the luminance to obtain a compensated luminance; and

a programmable gain amplifier, to adjust a gain value to amplify the compensated luminance and to obtain one or more of the R, G or B analog signals of the one or more R, G or B charge signal, respectively.

8. (Currently Amended)The circuit according to claim 5, wherein the gain adder further includes:

a plurality of gain amplifiers, to multiply the one or more of the R analog signal, the G analog signal, the B analog signal by the corresponding weighted gains to obtain a plurality of weighted analog signals; and

an adder, to add the weighted analog signals to obtain the addition analog signal.

9. (Currently Amended)The circuit according to claim 5, wherein the multiplexer selects one or more of the R, G or B analog signals and outputs a selected one to an analog-digital converter~~, which then converts the selected one into a digital signal~~.

10. (Currently Amended)A circuit ~~of a scanner to perform a color space conversion on an RGB signal~~, comprising:

a plurality of sampling-amplified-offset devices, to sample, amplify and compensate levels of ~~an~~ a R charge signal, a G charge signal and a B charge signal, respectively, to obtain ~~an~~ a R analog signal, a G analog signal and a B analog signal;

a plurality of gain adders, adapted to multiply each of the R, G and B analog signals by different weighted values to obtain a plurality of results, and to add the results of each of the R, G and B analog signals into a plurality of addition analog signals; and

a multiplexer, adapted to select the R analog signal, the G analog signal, the B analog ~~signal~~ signal or the addition analog signals as output.

11. (Currently Amended)The circuit according to claim 10, wherein one or more ~~each~~ of the sampling-amplified-offset devices further comprises:

a correlation double sampler, adapted to perform sampling twice on the R, G or B charge signals, and to perform a subtraction operation on results of the two samplings to obtain a luminance;

a programmable gain amplifier, adapted to adjust a gain value to amplify the luminance and to obtain an amplified luminance according to the gain value; and

an offset device, adapted to compensate level of the amplified luminance to obtain the R, G or B analog signal of the R, G and B charge signal, respectively.

12. (Currently Amended)The circuit according to claim 10, wherein one or more ~~each~~ of the sampling-amplified-offset devices further comprises:

a correlation double sampler, adapted to perform sampling twice on the R, G or B charge signal and to perform a subtraction operation on results of the two samplings to obtain a luminance;

an offset device, adapted to compensate a level of the luminance to obtain a compensated luminance; and

a programmable gain amplifier, adapted to adjust a gain value to amplify the compensated luminance, and to obtain the R, G or B analog signal of the R, G and B charge signal, respectively.

13. (Currently Amended) The circuit according to claim 10, wherein one or more ~~each~~ of the gain adders further includes:

a plurality of gain amplifiers, adapted to multiply the R analog signal, the G analog signal, the B analog signal by the corresponding weighted gains to obtain a plurality of weighted analog signals; and

an adder, adapted to add the weighted analog signals to obtain the addition analog signal.

14. (Currently Amended)The circuit according to claim 10, wherein the multiplexer selects the R, G or B analog signals and outputs a selected one to an analog-digital converter, ~~which then converts the selected one into~~ to form a digital signal.

15. (New) A method, comprising:

obtaining one or more color signals according to a first color model;

amplifying one or more of the color signals to obtain one or more amplified signals;

adding at least a portion of the amplified signals to obtain one or more output signals; and

providing said one or more output signals as one or more color signals according to a second color model.

16. (New) The method of claim 15, wherein the first color model comprises an RGB color model.

17. (New) The method of claim 15, wherein the first color model comprises an YUV color model.